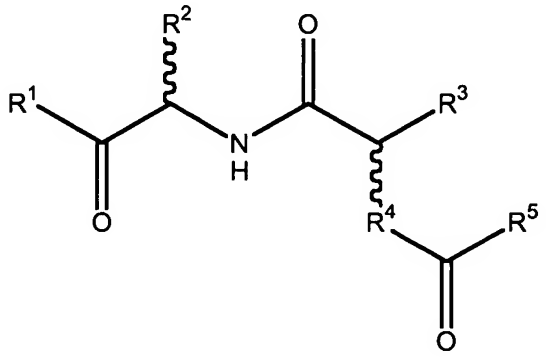
AMENDMENT TO THE CLAIMS

Claim 1 (currently amended): A chemical compound comprising an analog or a derivative of (S,S,R)-(-)-actinonin having the structure:



wherein R^1 is ~~an optionally substituted or halogenated~~ [[,]] indoline, indole, pyrrole, or imidazole;

R^2 is ~~methyl, CH_2CH_3, $(CH_2)_2CH_3$, $C(CH_3)_3$, phenyl, 3,4-dichlorophenyl, biphenyl,~~ ~~benzyl, 4-hydroxybenzyl~~, piperidine, ~~N-Boc-4-piperidine, CH_2-(N-Boc-4-piperidine), 4-tetrahydropyran, CH_2-4-tetrahydropyran,~~ 3-methyl indolyl, ~~2-naphthyl~~, 3-pyridyl, or 4-pyridyl, ~~3-thienyl~~;

R^3 is ~~R^2 or~~ a straight chain or branched C_{3-8}alkyl [[,]] ;

R^4 is methylene, ethylene or propylene ~~C_{1-3} alkyl~~; and

R^5 is ~~NH_2, OH, NHOH,~~ $NHOCH_3$, ~~$N(CH_3)OH$,~~ $N(CH_3)OCH_3$, $NHCH_2CH_3$, or $N(CH_2CH_3)_2$, ~~$NH(CH_2CH_3)$,~~ $NHCH_2(2,4\text{-}(OCH3)_2Ph$, $NHCH_2(4\text{-}NO_2)Ph$, ~~$NHN(CH_3)_2$, proline, or 2-hydroxymethyl pyrrolidine~~.

Claims 2-3 (canceled).

Claim 4 (previously presented): A pharmaceutical composition comprising a therapeutically effective amount of the compound of claim 1 and a pharmaceutically acceptable carrier.

Claim 5 (currently amended): A method for asymmetrically synthesizing a chemical compound having the structure of claim 1, comprising the steps of:

a) forming an optionally *O*-protected R^1-1-carbonyl-C2-(R^2)-methyleneamine from R^1 and an *N*-protected R^2-amino acid 2,5-dioxo-pyrrolidinyl ester and deprotecting said *N*-protected R^2-amino acid with a suitable agent comprising trifluoroacetic acid;

b) forming an R^3-carbonyl-oxazolidone from 4-isopropyl-oxazolidin-2-one and R^3-carbonyl chloride;

c) treating a solution of 4-(*S*)-isopropyl-oxazolidin-2-one with a solution of a base comprising n-butyl lithium in hexanes and adding an R^3-carbonyl chloride thereby forming an R^3-carbonyl oxazolidinone;

d) treating a solution of the R^3-carbonyl oxazolidinone sequentially with a base comprising lithium diisopropylamide and with a bromo-R^4 acid-*tert*-butyl ester thereby forming an oxazolidine-R^3-carbonyl-R^4-acid *tert*-butyl ester;

e) treating a mixture of the [[an]] oxazolidine-R^3-carbonyl-R^4-acid *tert*-butyl ester in tetrahydrofuran and water sequentially with hydrogen

peroxide in water and with lithium hydroxide in water thereby forming a C2(R^3)-R^4-dicarboxylic acid *tert*-butyl ester;

f) treating a mixture of the C2(R^3)-R^4-dicarboxylic acid 4-*tert*-butyl ester and hydroxysuccinimide in a solvent comprising dioxane or dimethylformamide with an imide comprising dicyclohexylcarbodiimide thereby forming an C2(R^3)-R^4-dicarboxylic acid *tert*-butyl ester-(2,5-dioxo-pyrrolidin-1-yl) ester.

g) treating a solution of said optionally *O*-protected R^1-1-carbonyl-2-(R^2)-methyleneamine in a solvent comprising tetrahydrofuran sequentially with triethylamine and with the C2(R^3)-R^4-dicarboxylic acid *tert*-butyl ester-(2,5-dioxo-pyrrolidin-1-yl) ester thereby forming an optionally *O*-protected R^1-1-carbonyl-2-(R^2)-carbamoyl-methylene(R^3)-R^4-carboxylic acid *tert*-butyl ester;

h) treating a solution of said optionally *O*-protected R^1-1-carbonyl-C2(R^2)-carbamoyl-methylene(R^3)-R^4-carboxylic acid *tert*-butyl ester in a solvent comprising methylene chloride with trifluoroacetic acid thereby forming an optionally *O*-protected R^1-1-carbonyl-C2(R^2)-carbamoyl-methylene(R^3)-R^4-carboxylic acid;

i) treating said optionally *O*-protected R^1-1-carbonyl-2- (R^2)-carbamoyl-methylene(R^3)-R^4- carboxylic acid and ~~hydroxysuccinamide~~ <u>*N*-hydroxysuccinimide</u> with an imide comprising dicyclohexylcarbodiimide thereby forming a optionally *O*-protected R^1-1-carbonyl-C2(R^2)-carbamoyl-methylene(R^3)-R^4-carboxylic acid 2,5-dioxo-pyrrolidin-1-yl ester;

j) treating a suspension of R^5 or the chloride thereof, said R^5 optionally *O*-protected, in a solvent comprising dimethylformamide sequentially with triethylamine and with a solution of said optionally *O*-protected R^1-1-carbonyl-C2(R^2)-carbamoyl-methylene(R^3)-R^4-carboxylic acid 2,5-dioxo-pyrrolidin-1-yl ester in a solvent comprising dimethylformamide thereby forming an R^1-1-carbonyl-C2(R^2)-carbamoyl-methylene(R^3)-R^4-carbonyl-R^5, said R^1 and R^5 independently optionally O-protected; and

k) hydrogenating said R^1 and R^5, said R^1 and R^5 independently comprising an O-protecting group, with hydrogen gas and a catalyst comprising palladium hydroxide in activated carbon wherein said chemical compound of claim 1 is thereby formed.

Claims 6-9 (canceled).

Claim 10 (currently amended): A method ~~for~~ of inhibiting the ~~treatment~~ growth of a tumor in an individual ~~neoplastic disease~~ comprising: ~~the step of~~

administering to ~~an~~ the individual ~~in need of such treatment~~ a pharmacologically effective dose of the chemical compound of claim 1; wherein said tumor is an ovarian cancer, a prostate cancer, a mammary cancer, a head and neck cancer, a non-small-cell lung-cancer, an adenocarcinoma, a squamous cell carcinoma, a lymphoma or a leukemia.

Claim 11 (canceled).

Claim 12 (original): The method of claim 10, wherein said individual is a human or an animal.

Claims 13-21 (canceled).